

LISTING OF THE CLAIMS

Please cancel claims 1-22 without prejudice; and add new claims 23-32 as follows:

1-22 (Cancelled)

23. (new) A system for removing waste from the blood of an individual comprising:

a blood processing device comprising a gap defined between an inner surface that is located about an axis and an outer surface that is concentric with the inner surface, an inlet and an outlet communicating with the gap, at least one of the inner and outer surfaces carrying a hemodialysis membrane, wherein the hemodialysis membrane includes a first surface facing toward the gap and a second surface,

the blood processing device including a channel to convey a dialysate along the second surface of the hemodialysis membrane to create a concentration gradient across the hemodialysis membrane to transport waste material from the blood,

a drive mechanism causing relative movement between the inner and outer surfaces about the axis at a selected surface velocity, and

a source of dialysate communicating with the channel.

24. (new) A system according to claim 23

wherein the drive mechanism rotates the inner surface while holding the outer surface stationary.

25. (new) A system according to claim 23

wherein the drive mechanism rotates the inner surface at a higher rate of rotation than the outer surface.

26. (new) A system according to claim 23,

wherein the other of the inner and outer surfaces carries a hemofiltration membrane or a hemodialysis membrane.

27. (new) A system according to claim 26
wherein the other surface carries a hemodialysis
membrane.

28. (new) A method for removing waste from the blood
of an individual comprising the steps of conveying the blood
through a gap defined between an inner surface that is located
about an axis and an outer surface that is concentric with the
inner surface, at least one of the inner and outer surfaces
carrying a hemodialysis membrane,

causing relative movement between the inner and outer
surfaces about the axis at a selected surface velocity, and

conveying a dialysate along an opposite side of the
hemodialysis membrane to create a concentration gradient across
the hemodialysis membrane to transport waste material from the
blood.

29. (new) A method according to claim 28
wherein the inner surface is rotated while holding the
outer surface stationary.

30. (new) A method according to claim 28
wherein the inner surface is rotated at a higher rate
of rotation than the outer surface.

31. (new) A method according to claim 28
wherein the other of the inner and outer surfaces
carries a hemofiltration membrane or a hemodialysis membrane.

32. (new) A method according to claim 31
wherein the other surface carries a hemodialysis
membrane.